

Space News Roundup

Vol. 22 No. 16

September 16, 1983

National Aeronautics and Space Administration

Lockheed wins KSC contract

NASA has selected Lockheed Space Operations of Titusville, Fla., for final negotiation of a contract to perform Space Shuttle launch and landing activities at the Kennedy Space Center (KSC) and on behalf of the U. S. Air Force at Vandenberg Air Force Base (VAFB), including operation of related ground systems at both launch sites.

Fifteen contractors currently provide these services for NASA and the USAF. The Shuttle Processing Contract (SPC) will consolidate these services into a single

contractual arrangement that will permit the Space Shuttle launch processing cycle to evolve from a research and development phase into an operational mode in which mission success and safety will continue to be achieved.

The initial transition phase of the contract will be on a cost-plus-award-fee basis. Once this transition is completed, the fee structure at both sites will become a cost-plus-incentive-fee with an award fee feature. The initial contract period is three years. The contract will contain one priced three-year

option and three unpriced three-year options, for a total potential contract period of 15 years. Lockheed's proposed cost for the initial six-year period is approximately \$2 billion.

Lockheed proposes to maintain stability and continuity by hiring a large percentage of employees currently performing the same or similar work at KSC. The contractor proposes a substantial goal for Small and Disadvantaged Business participation.

The SPC will be the second com-

prehensive contract award planned by NASA. The first, the KSC Base Operations Contract (BOC) was awarded to EG&G in December 1982.

The overall contract for Shuttle processing services will be administered by NASA and will contain separate statements of work for KSC and VAFB which will be managed by NASA/KSC and the USAF, respectively.

Requests for proposals were originally mailed to 71 companies and 20 additional companies re-

ceived copies of the RFP. Informational copies were mailed to seven labor representatives.

Two companies submitted proposals. Major subcontractors of Lockheed are Grumman Technical Services, Inc.; Morton-Thiokol, Inc.; and Pan-American World Services, Inc. Rockwell Shuttle Operations, Inc., also submitted a proposal supported by Boeing Services International, Martin Marietta Launch Services Corp., USBI Launch Services Corp. and United Airlines Aerospace Services Co.

Truly to assume U.S. Navy post

The wheels of *Challenger* had hardly stopped rolling, it seemed, ending the flawless STS-8 mission, when word came from Washington that *Challenger's* commander, Navy Capt. Richard H. Truly, had been named head of the newly established United States Naval Space Command.

Scheduled to be implemented October 1, according to Navy officials, the new unit will centralize operational responsibility for several Navy space activities. "The Navy's been active in space for many years," Truly explains, "and we've had satellites supporting the fleet ever since the space program started. The Naval Space Command is essentially made up of several existing Navy satellite programs and ground fleet support shore installations that previously have been reporting under different chains of command to the Navy authorities and are now being reorganized under a single command. And for me it's an opportunity to continue my Naval career, which is something that I have never wanted to really give up."

Truly is the first astronaut in NASA's 25-year history to return to active naval service. When the offer of the new post came from Chief of Naval Operations Admiral James D. Watkins prior to STS-8, Truly accepted on the condition that the appointment would not become effective until the conclusion of the mission.

A member of NASA's astronaut corps since transferring from the Air Force Manned Orbiting Laboratory program with six other astronauts in 1969, Truly began his career with the Naval Reserve Officer Training Corps (NROTC) at the Georgia Institute of Technology. Receiving his degree in Aeronautical Engineering in 1959 and his commission, he then completed a year of naval flight training. For the next three years, from 1960 to 1963, he was to make more than 300 carrier landings as a member of Fighter Squadron 33, serving aboard the *USS Intrepid* and the *USS Enterprise*.

Following that assignment he entered the USAF Aerospace Research Pilot School at Edwards Air Force Base and stayed on as an instructor after graduation, until being assigned to the Manned Orbiting Laboratory program in 1965. In September 1969 he joined NASA's astronaut ranks and subsequently served as a member of the astronaut support crew and CapCom for all three of the manned Skylab missions (1973-74) and for the Apollo-Soyuz Test Project (1975).

In 1977 Dick Truly and Joe Engle were assigned as pilot and commander respectively of one of the two two-man crews for the Approach and Landing Test program, which ushered in the Shuttle era. Acquiring experience flying the *Enterprise* in the ALT program, the *Columbia* on the STS-2 mission and the *Challenger* during STS-8, Dick Truly is the only person to have flown three orbiters. Discussing handling characteristics, he says, "I think there's very little difference. The *Enterprise*, you know, is naturally only a subsonic test vehicle, but the *Enterprise*, the *Columbia* and the *Challenger* fly essentially the same."

When Truly flew again with Engle on a Shuttle orbiter, it was at lift-off of the *Columbia* on November 12, 1981, for the STS-2 mission, and they became the first crew to fly a "used" spacecraft into orbit. And when the mission was shortened from the planned five days down to



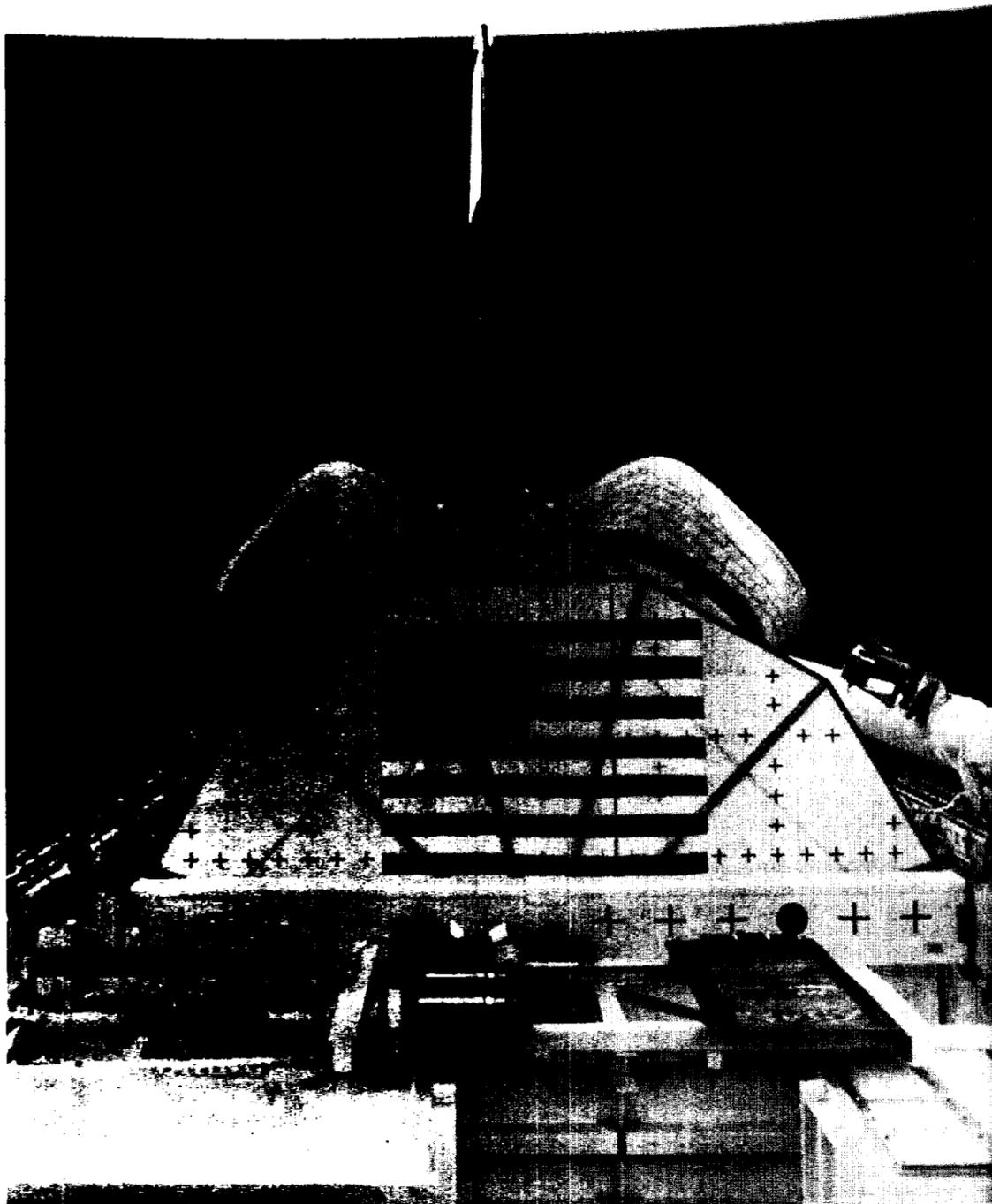
Truly during STS-8

two because of a malfunctioning fuel cell, the two astronauts still managed to achieve more than 90 percent of the objectives set for STS-2. That experience may help account for Truly's remarks during the STS-8 on-orbit press conference that a five-person crew is an "ideal size."

Commenting on the differences between *Columbia* and *Challenger*, Truly says, "Subjectively, I did think that the ascent ride on the *Challenger* was a little smoother than on the *Columbia*, but on the other hand, since it was my second time, maybe that was just a feeling I had."

The ride may have been smoother on STS-8, but it was no less exciting. The darkness of the night launch and reflections from low-lying

(Continued on page 2)



A view of the cargo bay, the horizon of Earth and a gibbous Moon were recorded in this scene from STS-8. The Payload Flight Test Article, a JSC-developed payload, is seen in the center of the cargo bay.

Truly to assume U.S. Navy post

(Continued from page 1)

clouds caused flames from the engines to appear to engulf the orbiter for many minutes, according to the crew inside. It was Truly's first experience as commander. The spectacular night launch, the first for a Shuttle, verified new ascent capability, but it was different from Truly's experience during the STS-2 liftoff in daylight. He said the flash when the two solid rocket boosters separated was "about 500 times more than what I remembered on STS-2."

Because of the timing of lift-off of STS-8, the orbiter was located over the Southern Hemisphere during daylight hours and able to photograph targets in that area, where previous crews had not because of darkness. One of the memorable sights from the windows of the *Challenger*, Truly says, were volcanoes. "The first time that I saw them, I had awakened in the middle of the night and gotten up by myself. We flew over a long island that I didn't recognize, and it had a river parallel to the coastline. And after we passed this island there were some other islands, and on one of these there was a volcano erupting. I mean, it was quite easy to see, and I was by myself, and I just didn't want to take a lot of pictures, because the other guys

were asleep, and I didn't want to wake them up." At the time he just made some notes in his checklist and sketched a quick drawing in order to be able to recognize the islands later on maps. "Right after that we were out over the Pacific, which I could recognize. Then I looked at the world atlas, and it turned out that an island that I had seen was New Guinea.

The crew spotted more volcanoes after that first one, which Dick Underwood of the Photographic Technology Division identified as the volcano Iliwerung on Lomblen Island in Indonesia. The crew photographed volcanoes and obtained pictures of the northern portion of the Great Barrier Reef.

The night landing of *Challenger*, another first, took place after six days in orbit, in the wee hours of the morning on Labor Day — at 40 minutes past midnight Pacific Daylight Time. The runway at Edwards was illuminated by 16 xenon arc lamps of 800 million candlepower each. It marked the first time that Truly had ever landed an orbiter. "Well, Joe did the landings in the *Enterprise* — of course, I was helping him as the pilot — and secondly, in the *Columbia*, so actually the night landing was the first actual landing that I had made, although I had ridden through and

was capable of making the landings in all of Joe's and my other flights. But it was different. For the last year we've been practicing at night and flying at night and developing the night lighting system and also developing and testing the heads-up display."

The heads-up display (HUD) was used for the first time on STS-6 and is a set of two small glass screens, an optical combiner, positioned such that when the commander looks out the window, he sees through the glass all essential instrument data and landing information without having to look down for instrument information as they glide in for landing.

Commenting on the night lighting system, he said, "The xenon arc lamps are awfully bright, and they

provide a tremendous capability at night, so much so that in all our landing sites, both at Edwards on the lakebed, the runway, and at Northrup and the Cape, as far as lighting went, I was confident that if I had had to land at any of those places, it would have been no problem."

The decision to leave the astronaut program was a difficult one for Truly. "I certainly don't want to leave the impression that I wouldn't love to stay here and continue to fly, because I've never had a better job. And commanding this crew and the *Challenger* on this mission was a great thrill. But there comes a time in everybody's life they have to make some tough decisions, and so I decided to just take a

different tack for a time."

A native of Fayette, Mississippi, Truly is married to the former Colleen Hanner of Milledgeville, Georgia, and they have three children, Richard, Daniel and Lee, who are ages 22, 20 and 19.

After logging over 6,500 hours in jet aircraft of various types, Truly also had to take his love for flying into consideration. "I hope to continue some flying, but I'm realistic enough to realize that the responsibilities in this job are not flying responsibilities. They're leadership and management responsibilities, and so I'm satisfied. I've had what I think is a fun and a great flying career, and I'm willing to stand on that."

—Betty Johnson

Bulletin Board

Clinic sponsoring flu immunizations

The JSC Clinic has begun giving influenza immunizations on a drop-in basis Mondays through Fridays from 10 a.m. to noon and from 2 to 4 p.m. Influenza viruses are responsible for only a portion of all respiratory diseases. They are, however, unique in their ability to cause periodic widespread outbreaks of fibrile respiratory disease in both adults and children. An annual vaccination is recommended for high risk individuals, and should be considered by those who provide essential services and/or may be exposed through greater contact with possibly infected persons, said Dr. Charles Bergholdt, JSC Occupational Health Officer. The vaccine being used is modified from last and still requires only one dose. There were some minor reactions to the vaccine last year, Bergholdt said, and patients this year will be asked to sign an informed consent form.

Lunarflins to offer SCUBA course

The JSC SCUBA diving club, the Lunarflins, will offer a six-week basic course beginning Sept. 20. The course will include classroom lectures at the Gilruth Recreation Center and supervised practical experience in the pool. Students who successfully complete the course will be certified by NAUI. Enrollment is limited. The club also schedules regular boat trips to coral reefs, sunken wrecks and platforms in the Gulf, as well as diving vacations in the Caribbean. Interested persons are urged to attend one of the monthly meetings to learn more about the club. For more information on the class, call the Rec Center at x3594.

Safety conference convenes this month

Safety professionals from around the world will gather in Houston Sept. 26 to 30 for the Sixth International System Safety Conference at the Westin-Galleria Hotel. This biennial conference provides a forum for safety experts to exchange technical information, managerial concepts and new methods and developments in system safety. The conference is an official function of the System Safety Society, Inc. and is endorsed by 21 other professional organizations. The theme this year is "New Frontiers in System Safety." Astronaut Donald Williams will address the President's Luncheon Sept. 27 at the Westin Galleria. For more information on the conference, contact E. Joyce Dinsdale at 486-1229.

Aerovan coming to JSC

NASA's latest traveling exhibit, the Aerovan from the Langley Research Center, will be at JSC from 9 a.m. to 5 p.m. Oct. 21 at the Rocket Park. The walk-through trailer has exhibits which focus on current research in safety, energy efficiency, environmental compatibility and improvements in passenger comfort and convenience. Some aeronautical artifacts are displayed, such as the first flight recorder, developed in 1928. A video presentation illustrates the devastating effects of flutter, while a working wind tunnel model shows one way the problem is being studied. All employees are invited to come by and take a look Oct. 21.

Next time:

An Anniversary edition

Twenty years ago on October 1, 1958, the National Aeronautics and Space Administration officially came into being. The next issue of the *Space News Roundup* will celebrate that milestone with a special 12-page anniversary edition dated September 30. Due to the special nature of that issue, we will omit news from the Gilruth Center, the Cafeteria Menu and the Roundup Swap Shop, as well as items which normally would appear in the Bulletin Board section of this paper. Full listings for the JSC Cafeteria through Oct. 14 appear in this issue. All advertisements submitted to the Roundup Swap Shop between now and Wednesday, Oct. 5, will be printed in the Roundup dated Oct. 14. We hope you enjoy the next edition, and happy anniversary.

People



Members of the Advanced Public Management Program smile on the last day of classes after five weeks of intensive training in Denver. From left to right, top row: Thomas Kloves, David Shultz, Lyn Gordon-Winkler, Carlington Stewart, Wayne Whittington, Richard Williams, Marilyn Wiley, Donald Simmanton and Barney Roberts. Bottom row, left to right: Joseph Loftus, Robert Hood, Richard Regenburg, Leopoldo Perez, Les Sullivan and William Rice.

America's first "Astrorats" are doing very well at the Ames Research Center after a triumphant voyage into space aboard STS-8, it was reported last week, proof positive that the little rodents had the "Rat Stuff." **Eenie, Meanie, Miney, Moe, Larry and Curly** — those are their unofficial names, anyway — seem to have fared well through an odyssey which engendered endless puns around the site and innumerable queries as to their well-being during the mission. And as it turns out, they may have added some valuable new information to the study of how Earth-bound animals react to spaceflight. "On the first day, I think they all would have liked to have had the price of their ticket back," said STS-8 Mission Specialist **Dr. William Thornton**. "But afterward they were feeding and grooming themselves and by the end of the mission they were literally doing backflips off the feeding cup. They developed great longitudinal stability and they obviously learned how to use the environment they were in." Along with the information their trip provided scientists on the ground, the "Original Six" also served to generate the kind of puns one might have expected. There was, for instance, the fictitious biography on the astrorats which detailed the diverse histories of such newcomers as **Eenie**, who was born on a merchant marine ship, graduated from Ratcliffe College with a Ph.D in animal husbandry and eventually got into the astrorat program after reading about it in the paper. Then there's **Miney**, who graduated with honors from Rat Point, his father having been a colonel in the Army's Rat Patrol. **Moe** worked at the Kraft Great American Cheese Research Laboratory before being selected by NASA, while **Curly** came in with a degree from Ratselaer Poly-

technic and **Meanie** was selected by virtue of illustrious studies at Ratre Dame. . .

Key personnel changes at JSC in the last several weeks include the new appointments of **Clarke Covington**, **Leonard S. Nicholson** and **Thomas L. Moser**. Covington was appointed to the Senior Executive Service (SES) as the Manager of JSC's Space Station Project Office. Covington came to JSC in 1962 and has worked as an aerospace engineer, a senior project engineer, a deputy branch chief, an office manager, and most recently, as Acting Manager of the Space Station office. Nicholson was appointed to the SES as the Manager of the Mission Integration Office within the National Space Transportation Systems Program Office. He came to JSC in 1963 and has served as an aerospace engineer, a project officer, an office manager and most recently as the Manager for Mission Integration. Tom Moser was reassigned to the SES position of Director of Engineering. He entered the SES in May, 1983 as the Deputy Manager, Space Shuttle Orbiter Project Office.

Summer employees who received awards at the Annual Summer Employees Banquet in August included: **Bridget Broussard**, **Carla Lewis**, **Eletha Maddox**, **Trina McDonald** and **Angie Zavala**, Outstanding Summer Aids; **Terri Johnson**, **Angela Miller**, **Shirley Sims**, **Dottie Smith**, **Myrna Staten** and **Angela Ware**, Outstanding Office Education Students; **Janice Dugas** and **Daphne Johnson**, Honorable Mention Summer Aids; and **Harriett Alexander**, **Jeanetta Banks**, **Monica East**, **La Tonya Lockett** and **Kemmie Wooten**, Honorable Mention Office Education Students. Over 250 people attended the banquet, which featured **Dr. Leonard H. O. Spearman**, President of Texas Southern University, as the main speaker.

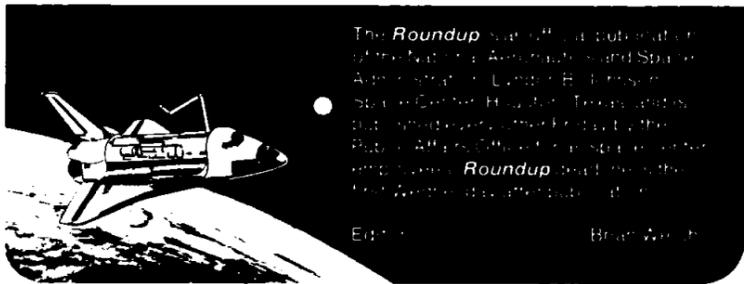
Dr. Milton A. Seveira, former Deputy Project Manager at JSC for the Space Shuttle Orbiter Program, has assumed his new role as NASA's Chief Engineer. Silveira replaces **Dr. Stanley I. Weiss**, who has become Vice President for Engineering for the Lockheed Corporation. Silveira began his NASA career in 1951 at Langley Field with the National Advisory Committee for Aeronautics and has held numerous positions with the Agency during the Mercury, Gemini and Apollo programs. He has authored or co-authored numerous technical papers and has been honored with the NASA Exceptional Service Medal.



Silveira being sworn in by NASA Administrator James M. Beggs as NASA's Chief Engineer.

NASA
Lyndon B. Johnson Space Center

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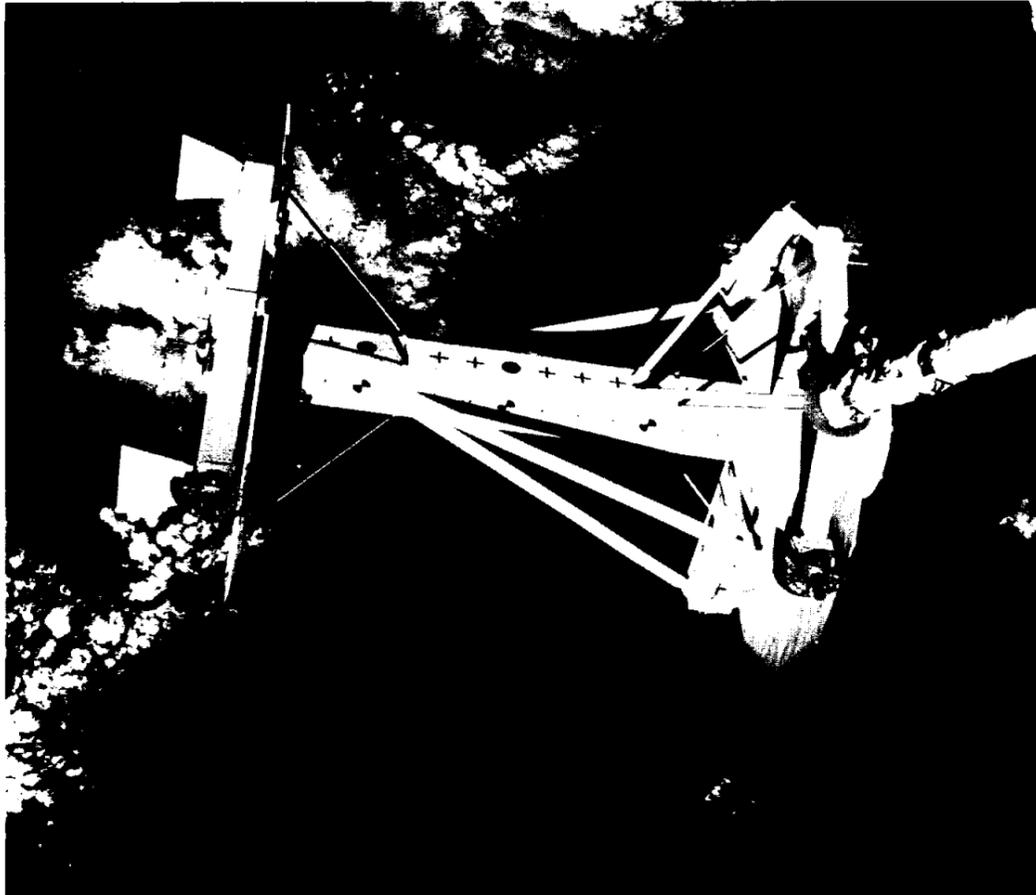
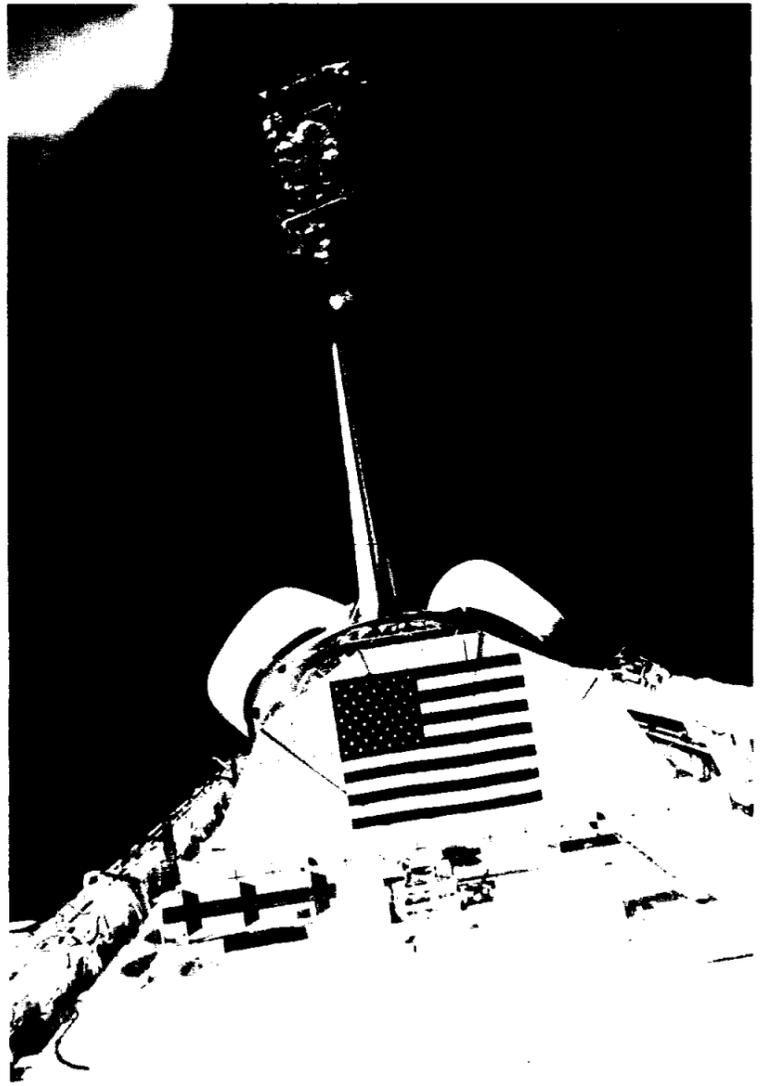
The *Roundup* is a weekly publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every other Friday by the Public Affairs Office. It is a space-oriented newspaper. *Roundup* and the *Space News Roundup* are published by the National Aeronautics and Space Administration.

Editor: [Name] Brain: [Name]

Working the 'Red Eye'



It was called NASA'S "Red Eye Special," a mission where the dictates of a night launch and orbital mechanics meant the crew of STS-8 was retiring in the morning, rising in the evening and working throughout the night, Houston time, that is. Above, the spectacular night landing is illuminated by the glare of xenon arc lamps at Edwards Air Force Base. At left, another look at the night launch six days earlier, an event which observers said lit up the sky like a midday sun. Below left, Commander Richard Truly and Mission Specialist Guy Bluford are a study in personal preference as they float asleep in the middeck area. At bottom, the JSC-developed Payload Flight Test Article is shown at the end of the robot arm during dynamics tests. At bottom right, Mission Specialist Dr. William Thornton wrestles with a ream of tape used in his biomedical data collection. At right, a view of the Insat 1-B satellite during its deployment.



Roundup Swap Shop

Property & Rentals

For lease/rent: Webster 1 BR condo, W/D, appliances, ceiling fan, alarm, \$350/mo. Call Richard, x4770 or 487-7113.

For lease: Sterling Knoll 3-2-2, fenced, no pets, no lease, \$400/mo. plus one month deposit. Call 488-0500 or 480-6516 after 5 p.m. or weekends.

For sale: Kemah brick 3-2-2, new carpet, wallpaper and paint, 15 min. to JSC, 8 yrs. old, \$3,000 down, \$450/mo. Call 486-0462.

For sale: Arlington Heights 3-2-2, storm windows, ceiling fans, fireplace, 30x15 screened patio, darkroom, many extras. Call 487-7546 after 5 p.m.

For rent: Ski during Christmas week, two 1 BR condos at Christie Lodge, Beaver Creek, CO near Vail, each sleeps six. Call McCollum, 474-3839 after 5 p.m.

For lease: 10 acres in Alvin area, fenced, on paved road, horses, cattle. Call Damewood, 482-5572.

For sale: Wedgewood 3-2-2, reduced to \$70,900, over 2,000 sq. ft. w/ 30 x 16 gameroom, landscaped, quiet, must see. Call 482-5393.

For sale or lease: Nassau Bay townhouse, spacious, 2-2.5-2, new carpet & paint, best location, \$61,500 or \$525/mo. Call 334-4184.

For rent: Condo in Avon, CO, sleeps 4 adults, 2 children, for one week: Jan. 14-20, 1984, \$800. Call 334-1628 after 4:30 p.m.

For rent: Galveston By-The-Sea condo, 2 BR, furnished apartment for rent by day (2 minimum) weeks or month. Call Clements, 474-2622.

Cars & Trucks

1981 Monte Carlo, PS, PB, AC, AM/FM, tilt/cruise, trailer package, 33K miles, \$6,300/best offer. Call Ray, x5250 or 554-2908 after 6 p.m.

1980 Dodge Ram export model van, 6 cyl., 3 speed manual w/OD, 4 captain's chairs, rear bench/bed, excellent condition, 25+ MPG, \$5,500. Call Ron, x4857 or 332-3058 after 5 p.m.

1976 Datsun B210, 4 spd., very clean, good economical vehicle. Call C. Nash, x6484 or 334-1404 after 5 p.m.

1976 Vega, new radials, runs well, \$650. Call 554-2416 after 6 p.m.

1973 Nova Coupe, \$1,250 or 1976 Nova Sedan, \$1,450. Call Hix, x3171 or 333-4396.

1981 Subaru DL station wagon, 27,000 miles, AM/FM/cassette, AC, 5 spd., new tires, runs great, \$4,495. Call Hughes, 486-1256 or 488-8589.

1977 Jeep CJ-7, V-8, auto trans-quadratic with large gas tank, 2000# winch and externally mounted gas tanks, \$4,600. Call Phil, x2876 or 488-4453.

1977 Olds Cutlass, V-8, good body, \$1,300 or make offer. Call David, 482-4256 after 5 p.m.

1970 Pontiac 350, good used car, good tires, looks OK, \$400. Call Kevin, x3654 or 480-8461.

1982 Chevy customized van, fully loaded, AC, cruise, custom paint, CB, cassette, etc., asking \$14,000. Call 338-1074 after 5 p.m.

1977 Pontiac Catalina, 4 dr., good condition, excellent work car, dependable, \$1,800, neg. Call Lynn, 486-9281.

Boats & Planes

For rent: Piper Lance, 6 place, 160 knots, full 1FR, club seating, \$85/hr. wet. Call L. Damewood, 471-1675.

FAA Instrument Ground School, \$10 through Gulf Coast Aero Club, \$8/mo. dues, starts Sept. Call Mark, x4436 or 554-2538.

1979 Chris Craft Catalina hardtop cruiser, 25 ft. with V-8, 225HP engine, less than 100 hours, \$13,600. Call Bernhard, x4461 or 333-2968.

Full or part interest in '46 Globe Swift, 125 HP, full gyro panel, good radio. Call Leo Langston, x5954 or 554-6460 evenings.

Cycles

1973 Honda 450 with extra motorcycle for parts, 4500. Call Hix, x3171 or 333-4396.

1981 Kawasaki KZ305 CSR, low miles, some extras, \$800 or best offer. Call JJ, x3916 or 334-6821.

1982 Honda XL 500R, 2,400 miles, excellent condition, \$1,500 or best offer. Call 554-2506 after 5 p.m.

1977 Yamaha SX400, dual disc brakes, 6 spd., excellent condition, 9,800 miles, \$850. Call 474-2738.

Schwinn 27" Traveler, 10 speed, very good condition, factory serviced, manuals, hardly used, \$125. Call Gary, x3869 or 480-9166.

Audiovisual & Computers

Kenwood R599A receiver/T599A transmitter, \$400; Argonaut 515 with MFJ dual tunable audio filter, \$325; Heath SB-610 scope, \$75. Call Byron, x5226 or 538-1201.

VIC-20 home computer with super expander cartridge, complete documentation plus Intro to Basic self-teaching course. Call JJ, x3916 or 334-6821.

Satellite TV antenna, receiver and stereo processor, new complete system, \$3,200. Call Dennis Grounds, 488-9005.

Household

Dining room suite, table, six chairs, china. Call 474-3839 after 5 p.m.

Matching couch and loveseat, Earth tones, good condition, \$125 cash. Call 996-1274.

Kenmore washer, \$150; dryer, \$50; 3 upholstered bar stools, \$100; 9 x 12 area rug and pad, \$65; two wrought iron lamps, \$45; weed eater, \$30; cot and mattress, \$30. Call Tom, x2653 or 781-7798.

King size bedroom suite, bed/mattress, solid cherry wood triple dresser,

two lamp tables. Call 482-4600.

Washer and gas dryer, Sears Lady Kenmore, good condition, \$150/pair; J.C. Penny refrigerator, harvest gold, good condition, \$75. Call 485-5106.

Corner bedroom unit, with table, \$125; corner table with built-in stereo, \$40. Call Billie, x4851.

Sofa, 108" rust/gold herculon, super condition, \$200 or best offer. Call 482-6027.

Twin bed, excellent condition, \$75; green rocker, broken spring, \$25. Call 488-4915.

Three mirror Victorian walnut dresser. Call Lee Brubaker, x5565 or 554-6034 after 5:30 p.m.

Queensize waterbed, \$100. Call Linda, x3421 or 480-5851.

Wanted

Want to carpool from Gessner/West Park area, southwest Houston, hours flexible, non smokers only. Call Tom, x2653.

Want to buy electric trains. Call Don Jeffers, x2449.

Want baby bed and high chair, preferably folding. Call Lee Brubaker, x5565 or 554-6034 after 5 p.m.

Lost

Lost: Ladie's pinkie ring, gold tone, bears Greek symbols Gamma Phi Beta, lost in Bldg. 1 or area. Call Jean Anne Hall, x2930.

Pets

AKC toy poodle, black female, 7 wks. old. Call 554-4306 after 3:30 p.m.

Labrador retriever puppies, AKC, champion bloodline, 2 months old. Call Art Morridge, 488-4047 or 444-2951.

Musical Instruments

Signet clarinet, 11 reeds, cork grease & swab, good condition, \$150. Call 482-8233 after 5 p.m.

Normandy clarinet, needs overhaul, approved at Clear Lake Intermediate School, \$100. Call 488-4915.

Normandy B flat clarinet, good for beginners, price negotiable. Call M.E. Jones, x5879 or 472-3303.

Fender precision bass, \$600; Sunn bass amp head, \$275; Sunn bass cabinets, \$250 each; Ampeg bass amp head, \$500; Cerwin power amp, \$400. Call Byron, 473-8780 or 476-9711 after 6 p.m.

Miscellaneous

Piston-type air compressor for VW Bug, \$25. Call 482-8233 after 5 p.m.

Wood door, 36" x 80", 21 panels, good tabletop for patio or pool area. Call 554-2908 after 6 p.m.

Diamonds, investment quality, registered and documented, selling .27, .26, .23, .10 and .07 wholesale, the lot \$800. Call

Two BF Goodrich steel belted radial tires, excellent tread life remaining, asking \$40 each. Call Der Bing, x3165 or 481-2336 after 6 p.m.

Baby carriage, very good condition, \$50. Call 488-6521.

Sears Craftsman 18" chain saw, about 1 hr. use, \$175. Call Dr. Hein, x4111.

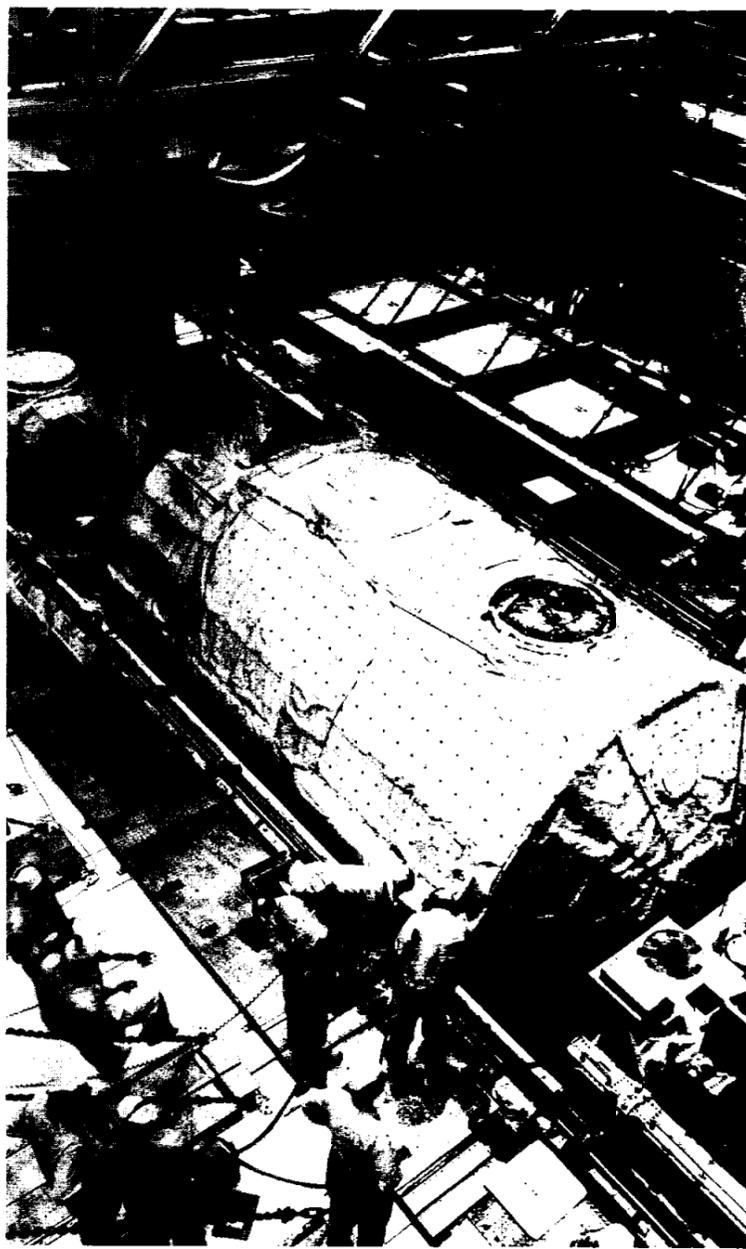
Wedding dress, size 11, never worn, \$260. Call Mable, x2994 or 734-8514 evenings.

Fuzzbuster II radar detector, scans all bands in 3 microseconds, no reasonable offer refused. Call 337-1840 after 5 p.m.

Rolex man's 3/4 watch, paid \$2,400, asking \$1,200 or best offer. Call Alan, x5514 or 488-4047.

Savage .22 bold action rifle, excellent, \$50; five HP garden tiller, needs work, \$35; misc. lawn mowers, make offer. Call 488-3966.

BSR turntable, in box, never used. Call Lee Brubaker, x5565 or 554-6034 after 5:30 p.m.



The Spacelab I module and attached pallet are shown being installed in the cargo bay of the Space Shuttle Orbiter Columbia on August 16. The transfer from the Operations and Checkout Building to the Orbiter Processing Facility took place shortly after midnight on August 16 and the installation was complete at approximately 1 p.m.

Cookin' in the Cafeteria

Week of September 19 - 23, 1983

Monday: French Onion Soup; Beef Chop Suey, Polish Sausage w/German Potato Salad, Breaded Veal Cutlet (Special); Okra & Tomatoes, Green Peas. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Split Pea Soup; Salisbury Steak, Shrimp Creole, Fried Chicken (Special); Mixed Vegetables, Beets, Whipped Potatoes.

Wednesday: Seafood Gumbo; Fried Catfish w/Hush Puppies, Braised Beef Rib, BBQ Plate, Weiners & Beans, Shrimp Salad, Stuffed Bell Pepper (Special); Corn O'Brian, Rice, Italian Green Beans.

Thursday: Chicken Noodle Soup; Beef Stroganoff, Turkey & Dressing, BBQ Smoked Link (Special); Lima Beans, Buttered Squash, Spanish Rice.

Friday: Seafood Gumbo; Broiled Turbot, Liver & Onions, Fried Shrimp, Meat Sauce & Spaghetti (Special) Green Beans, Buttered Broccoli, Whipped Potatoes.

Week of September 26 - 30, 1982

Monday: Beef & Barley Soup; Beef Chop Suey, Breaded Veal Cutlet w/Cream gravy, Grilled Ham Steak, Weiners w/Baked Beans (Special); Buttered Rice, Brussel Sprouts, Whipped Potatoes. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Celery Soup; Fried Shrimp, Pork Chop w/Applesauce, Turkey a la King, Chinese Pepper Steak (Special); Au Gratin Potatoes, Breaded Squash, Buttered Spinach.

Wednesday: Seafood Gumbo; Fried Catfish w/Hush Puppies, Braised Beef Ribs, Mexican Dinner (Special); Spanish Rice, Ranch Beans, Buttered Peas.

Thursday: Green Split Pea Soup; Corned Beef w/Cabbage & New Potatoes, Chicken & Dumplings, Tamales w/Chili, Hamburger Steak w/Onion Gravy (Special); Navy Beans, Buttered Cabbage, Green Beans.

Friday: Seafood Gumbo; Deviled Crabs, Broiled Halibut, Liver & Onions, BBQ Link (Special); Buttered Corn, Green Beans, New Potatoes.

Week of October 3 - 7, 1983

Monday: French Onion Soup; BBQ Sliced Beef, Parmesan Steak, Spare Rib w/Kraut, Chili & Macaroni (Special); Ranch Style Beans, English Peas, Mustard Greens. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Split Pea Soup; Meatballs & Spaghetti, Liver & Onions, Baked Ham w/Sauce, Corned Beef Hash (Special); Buttered Cabbage, Cream Style Corn, Whipped Potatoes.

Wednesday: Seafood Gumbo; Cheese Enchiladas, Roast Pork w/Dressing, BBQ Link (Special); Pinto Beans, Spanish Rice, Turnip Greens.

Thursday: Beef & Barley Soup; Roast Beef w/Dressing, Fried Perch, Lasagne w/Meat, Chopped Sirloin, Chicken Fried Steak (Special); Whipped Potatoes, Peas & Carrots, Buttered Squash.

Friday: Seafood Gumbo; Fried Shrimp, Baked Fish, Beef Stroganoff, Fried Chicken (Special); Okra & Tomatoes, Buttered Broccoli, Carrots in Cream Sauce.

Week of October 10 - 14, 1983

Monday: Holiday

Tuesday: Navy Bean Soup; Beef Stew, Liver & Onions, Shrimp Creole, Smothered Steak w/Dressing (Special); Corn, Rice, Cabbage, Peas. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Wednesday: Seafood Gumbo; Roast Beef, Baked Perch, Chicken Pan Pie, Salmon Croquette (Special); Mustard Greens, Italian Green Beans, Sliced Beets.

Thursday: Beef & Barley Soup; Beef Tacos, Diced Ham w/Lima Beans, Stuffed Cabbage (Special); Ranch Style Beans, Brussels Sprouts, Cream Style Corn.

Friday: Seafood Gumbo; Fried Shrimp, Deviled Crabs, Ham Steak, Salisbury Steak (Special); Buttered Carrots, Green Beans, June Peas.

Gilruth Center News

Call x3594 for more information

Club data — The Rec Center is compiling data on clubs available to JSC employees. If your club is not a part of that listing, please call Helen Munk at x3594 so information can make its way to those who are interested.

Speedreading — Techniques to gain greater reading speed and comprehension are covered in this course which meets for seven weeks beginning Sept. 26 from 6 to 9 p.m. The Monday class is \$60 per person and the registration deadline is Sept. 22. All materials are supplied.

Bookkeeping — This class shows you how to keep books for small home businesses and for your home finances. The class begins Sept 29 and runs from 7 to 9 p.m. The two-week session costs \$20 per person and the registration deadline is Sept. 26.

Ladies exercise — This class meets Tuesdays and Thursdays from 5:15 to 6:15 p.m. and begins Oct. 4. The class costs \$12 per person.

Defensive driving — Learn to drive safely and qualify for a 10% reduction in your auto insurance for the next three years. The class meets from 8 a.m. to 5 p.m. Saturday, Oct. 22. The cost is \$20 per person and space is limited.

Race — The next Rec Center race is a 5 kilometer or 1 mile event beginning at 8 a.m. Sept. 24. The entry fee is \$1 per person with awards to the top men and women in each bracket.

Weight safety — This class is required for all of those who wish to use the new weight room at the Rec Center. The class meets from 8:30 to 10 p.m. Sept. 26 or Oct. 3. It's for your protection as well as ours, and the cost is \$4 per person.

Arm wrestling — This competition will be held from 1 to 5 pm. Sept. 24. Registration deadline for the event is Sept. 23. Trophies will be awarded, and the cost for the competition is \$2 per person.

Home computing — The computer age is here, and one of its prime components is basic programming. Learn all about it in this class designed around the Commodore VIC-20. The class runs from 7 to 9 p.m. Tuesdays and Thursdays beginning Oct. 4 for one month. The cost is \$80 per person.



National Aeronautics and Space Administration
Twenty-fifth Anniversary
1958-1983